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ABSTRACT

This guide provides members of the National Education Goals Panel (NEGP) with the information they need to select the indicators for the first annual progress report (September, 1991) on the six national education goals. The guide is organized by the following six goal areas: readiness for school (Goal 1); high school completion (Goal 2); student achievement and citizenship (Goal 3); science and mathematics (Goal 4); adult literacy and lifelong learning (Goal 5); and safe, disciplined, and drug-free schools (Goal 6). Within each goal area, the discussion contains: recommendations of the Resource Groups (RGPs) regarding data to appear in the first report; a brief summary of the proposed indicator; NEGP staff summaries of the strengths and weaknesses of the proposed indicator; identification of issues associated with reporting on the proposed indicator; potential alternative or additional indicators; and potential reporting options. Each respective RGP recommends for publication in the 1991 progress report the following: seven national and three state-level indicators (Goal 1); four national and two state-level indicators (Goal 2); four national and four state-level indicators (Goal 3); five national and four state-level indicators (Goal 4); three national and state-level indicators (Goal 5); and four national and one state-level indicators (Goal 6). (RLC)

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NATIONAL EDUCATION GOALS PANEL

MEASURING PROGRESS TOWARD THE NATIONAL EDUCATION GOALS:

A GUIDE TO SELECTING INDICATORS

U.S. DEPARTMENT OF EDUCATION
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SEPTEMBER 1991 PROGRESS REPORT

JUNE 3, 1991

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NATIONAL EDUCATION GOALS PANEL

MEASURING PROGRESS TOWARD THE NATIONAL EDUCATION GOALS:

A GUIDE TO SELECTING INDICATORS

SEPTEMBER 1991
PROGRESS REPORT

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OPTIONS PAPER

A GUIDE TO SELECTING INDICATORS FOR MEASURING PROGRESS TOWARD THE NATIONAL EDUCATION GOALS: THE SEPTEMBER 1991 REPORT

Introduction

The purpose of this *Guide* is to provide members of the National Education Goals Panel (NEGP) with the information they need to select the indicators for the first annual progress report on the national education goals, to be published in September of 1991. This *Guide* is organized by goal area. Within each area the discussion contains the following information:

- Recommendations of the resource groups regarding data to appear in the first report. The resource groups were asked to confine their recommendations on data that either are already available or could be collected in time for publication of the first report. This *Guide* groups these resource group recommendations into distinct topics. For example, the Goal 1 resource group envisions the publication of 1991 report data on the topics of prenatal health, parental age and education, preschool program participation, home activities with preschoolers, children's access to health care, the quality of preschool programs and the nutritional status of children. The Panel is being asked to decide whether data on each of these topics should be published in the 1991 report, whether a subset of those recommended should be reported, or whether data from alternative indicators should be reported.

- A brief summary of the proposed indicator. In the *Guide*, each potential indicator is accompanied by a brief statement about its availability and an example (developed by NEGP staff) of the type of information that might appear in the 1991 report. Additional information about the proposed indicator can be found in the March 25 Discussion Document and Compendium of Interim Resource Group Reports.

- NEGP staff summaries of the strengths and weaknesses of the proposed indicator. NEGP staff were asked to summarize the strengths and weaknesses of each of the potential indicators recommended for publication in 1991. In producing these summaries NEGP staff considered the relative priority placed by the resource group in the publication of the data plus other factors including any comments received on the proposed indicator in public testimony, the technical quality of the data base for measuring progress over time, the "understandability" of the proposed indicator, and the extent to which it is likely to provide an ongoing direct measure of progress toward achieving the goal and/or its objectives at the national and state levels.

- Identification of issues associated with reporting on the proposed indicator. Some of the proposed indicators raise major questions that the Panel should consider. For example, if NAEP is chosen as the principal source of data on student achievement, should the progress report publish the most recent scores in each of

the five content areas specifically mentioned in the goal statement for all three grade levels? Should scores in other areas also be reported?

- Potential alternative or additional indicators. NEGP staff have noted alternative or additional indicators for possible publication in 1991, where the data appear to be currently available and relate to the goal or one of its objectives. Frequently, these alternatives or additions were suggested in public testimony. For example, some suggested the publication of SAT/ACT scores either in addition to, or in place of, NAEP achievement scores in the 1991 report.

- Potential Reporting Options. NEGP staff developed a series of potential options for reporting on the indicators based on the information discussed above. The first option described is always the final resource group recommendation, while other options typically reflect some subset of these recommended indicators. The options attempt to reflect the relative strengths and weaknesses of the proposed indicators as outlined by Panel staff. The staff, however, do not consider these options exhaustive. The Panel may find other indicators more appropriate.

It is our hope that the information provided in this *Guide* will be useful to the Panel as it begins the task of defining the contents of the September 1991 Progress Report on the national education goals. Once the indicators have been selected, NEGP staff will begin the process of collecting the data, constructing the actual measures and designing formats for the report. We anticipate presenting information to the Panel on options and alternatives for indicator construction and report design by the middle of August.

READINESS FOR SCHOOL

Goal and Objectives

GOAL 1: **By the year 2000, all children in America will start school ready to learn.**

Objectives:

- All disadvantaged and disabled children will have access to high quality and developmentally appropriate preschool programs that help prepare children for school.
- Every parent in America will be a child's first teacher and devote time each day helping his or her preschool child learn; parents will have access to the training and support they need.
- Children will receive the nutrition and health care needed to arrive at school with healthy minds and bodies, and the number of low birthweight babies will be significantly reduced through enhanced prenatal health systems.

1991 Options For Reporting on Readiness for School

A. Recommendations of Resource Group 1

The Goal 1 Resource Group recommends publication of **seven national indicators and three state level indicators** in the 1991 progress report.

1. *Prenatal Health.* **National and state data** annually available from birth records administered by the Centers for Disease Control (HHS) on the incidence of low birthweight babies and amount of prenatal care given to expectant mothers. An example of data to be reported would be the percentage of children born in 1990 whose mothers received no prenatal health care.

   Strengths:
   - o Highest priority indicator of resource group 1;
   - o Direct measure of objective 3 under this goal.
   - o Relationship between these conditions and readiness commonly recognized by early-childhood community;
   - o Annual data available at both the national and state levels;

   Weaknesses:
   - o Not a direct measure of the goal;
   - o Not a direct measure of the health or nutrition of children entering school;
   - o Citizens may not readily understand the linkage between these conditions and readiness for school.

   Issue:
   - o Should both low birthweight incidence and prenatal health data be reported?

   Potential alternative/additional indicators:
   - o Maternal participation in WIC program;
   - o Infant mortality rates;
   - o Nutritional status of pregnant women;
   - o Child immunization rates.

2. *Parental Age and Education.* **National and State data** available annually from birth records administered by the Centers for Disease Control (HHS). An example of data to be reported would be the percentage of births to teenage mothers in 1990.

   Strengths:
   - o Highest priority indicator of resource group 1;
   - o Available annually at the state and national levels;

Weaknesses:
o Not a direct measure of the goal;
o Not a direct measure of home and parenting conditions;

Issue:
o Should data on both parents' age and education be reported?

3. *Preschool Program Participation.* **National data** available annually from the Census Bureau (Current Population Survey) and **national and state data** (for handicapped children) available annually from the U.S. Department of Education based on state reports. An example of data to be reported would be the percentage of 3–5 year olds participating in preschool programs in 1990.

Strengths:
o Highest priority indicator of resource group 1;
o A direct measure of objective 1;
o Strongly favored by some major constituency groups;
o Linkage to goal should be easily understood by most citizens;
o Annual data availability;

Weaknesses:
o Not a direct measure of the goal;
o Not available at the State level (except for handicapped data);
o Data can be misleading without a program quality component;

Issues:
o Should preschool participation levels of all children be reported, or only low-income and disabled children?

Potential alternative/additional indicators:
o Percent of eligible children receiving Head Start;

4. *Home Activities with Preschoolers.* **National data** on parenting activities from a new National Center for Education Statistics survey of households (National Household Educational Survey). Comparable data anticipated twice more during this decade. An example of data to be reported would be the percentage of parents who read to their young children in 1991.

Strengths:
o Relationship to readiness for school recognized by early childhood community and should be evident to most citizens as well;
o A direct measure of objective 2 under this goal.

Weaknesses:
- o Not a direct measure of the goal;
- o Not available at the State level;
- o Not available annually;
- o Data not yet available. Will be somewhat difficult to obtain for the 1991 report.

5. *Children's Access to Health Care.* **National data** available annually from a National Center for Health Statistics survey of households (National Health Interview Survey). An example of data to be reported would be the proportion of 3–5 year olds who had not seen a doctor during the past year.

Strengths:
- o Available annually;
- o Some constituencies strongly support focus on "access" issues;
- o A direct measure of objective 1.

Weaknesses:
- o Not a direct measure of the goal;
- o National data only.

6. *Quality of preschool programs.* **National data** available from a new U.S. Department of Education child–care survey. No future surveys of this kind are currently scheduled. An example of data to be reported would be the percentage of teachers in child–care centers in 1990 who have taken courses in child development or psychology.

Strengths:
- o Importance of data on this stressed by some in public testimony. Supported strongly by early–childhood groups;
- o Quality dimension of preschool programs explicitly recognized in objective 1.

Weaknesses:
- o Not a direct measure of the goal;
- o National data only;
- o No current plans for continuing these data collections.

Potential alternative/additional indicator:
- o State regulations on the maximum group size for preschool programs.

7. *The Nutritional Status of Children.* **National data** available from a U.S. Department of Agriculture survey of children's mothers. An example of data to be reported would be the percentage of young children considered to have various nutritional deficiencies.

Strengths:

o Strong support from early childhood and education communities in public testimony;
o Annual collection;
o A direct measure of objective 3.

Weaknesses:

o Not a direct measure of the goal;
o National data only;
o Survey of parents, not children. More direct national (but not state) child nutrition and health information will be available in 1992 and again in 1995;
o A relatively low resource group priority for 1991 because of difficulty in selecting and interpreting data from existing surveys.

Issue:

o Should the Panel delay reporting on children's nutritional status until direct assessments are available in 1992?

B. Potential Reporting Options

1. *Report data on each of the seven national level and three state level indicators as described above.* The resource group believes that all their recommended indicators constitute important information that should be presented to the nation in the 1991 report.

2. *Report no readiness data in the 1991 progress report.* Since none of the suggested measures directly assess "readiness for school" the Panel could defer reporting an indicator in this area until a more direct indicator of readiness for school is available later in the decade.

3. *Report three indicators of readiness; one child health indicator (e.g., prenatal health or child access to health care), one preschool home activities indicator, (e.g., parental age and education or home activities with preschoolers) and one preschool program participation indicator (e.g., the level of preschool participation or measures of preschool program quality).* This is consistent with the framework laid out by the resource group. Indicators in these areas are generally viewed as strong predictors of readiness for school. Potential state data to be reported under this option would be restricted to information on low birthweight/prenatal care from the Centers for Disease Control.

4. *Report more than one indicator in selected readiness areas.* The Panel could publish multiple indicators in one or more of the readiness areas defined in the resource group report (child health and nutrition, home and parenting conditions and preschool programs). For example it could report data on both preschool participation rates and measures of program quality. This would present a more comprehensive picture of readiness than the three indicator format suggested under option three, but would also be more complex to read and interpret.

HIGH SCHOOL COMPLETION

Goal and Objectives

GOAL 2: **By the year 2000, the high school graduation rate will increase to at least 90 percent.**

Objectives:

- The nation must dramatically reduce its dropout rate, and seventy-five percent of those students who do drop out will successfully complete a high school degree or its equivalent.

- The gap in high school graduation rates between American students from minority backgrounds and their non-minority counterparts will be eliminated.

1991 Options for Reporting on High School Completion

A. Recommendations of Resource Group 2

The Resource Group recommends publication of **four national indicators and two state level indicators in the 1991 progress report.**

1. *High School Completion rates (overall and by racial/ethnic identification).* **National data** available annually from the Census Bureau (Current Population Survey). **State data** on overall high school completion rates available annually from NCES. State data on completion rates for different race/ethnic groups would be obtained from a new state survey asking for data that may have been already collected on this topic. For the nation, an example of the data to be published would be the percentage of 19–20 year olds in 1990 who have a high school credential. For states, a sample measure would be the estimated percentage of public school ninth grade students in 1986 who received various types of high school completion credentials (regular diplomas, GED certificates, etc.) by 1990.

   Strengths:
   - o Direct measure of the goal, and objective 2;
   - o Annual data collections;
   - o National and state–level data currently available.

   Weaknesses:
   - o National completion rate data will not be directly comparable to state collections;
   - o State data not comparable across states;
   - o State completion rate data are estimates, not actual student counts;
   - o Small sample sizes in the national data collection make race/ethnic indicators less reliable from year to year;
   - o State completion rate data by race/ethnic group not yet collected. If collected for the 1991 report, the data will not be comparable across jurisdictions.

   Issues:
   - o Should state data be reported given issues of data comparability?
   - o Should national data be reported by race/ethnic group? (State data can not be reported this way in 1991 without conducting a new state survey).
   - o Should national data be reported for both 19–20 year olds and 24–25 year olds?

2. *Data on Known Predictors of Dropping Out and Completing School (e.g., poverty, single parent families, limited English proficiency, attitudes about school,) by race/ethnicity.* New **national data** available approximately once a

decade from NCES longitudinal studies. An example of data to be published would be the high school completion rates of children from single parent families vs. from two-parent households in 1982. Data are intended to provide background to the completion rate outcome data reported, in order to illustrate the relationship between high school completion and these factors.

Strengths:
o Educates the public on factors associated with high school completion. Makes variability in completion rates among different race/ethnic groups more understandable;
o Relationship of these variables to high school completion should be evident to most citizens;

Weaknesses:
o Indirect relation to goal. Not outcome measures;
o The best predictor data are only available infrequently from longitudinal studies;

Issue:
o Is published information on these predictors necessary to provide a context for understanding the variability in high school completion rates among different race/ethnic groups?

3. *Dropout Rates*. **National data** available annually from the Census Bureau (Current Population Survey). and approximately once a decade from NCES longitudinal studies. **State data** would come from a new survey of states asking for data they may have have already collected on this topic. An example of data to be published would be the proportion of students leaving school in 1990 without a high school credential.

Strengths:
o Easy to understand and track over time;
o Census Bureau dropout data available annually;
o Direct measure of objective 1.

Weaknesses:
o Not a direct measure of the goal;
o State data not yet collected. If collected for the 1991 report, the data will not be comparable across jurisdictions;
o Data trends should be consistent (in the opposite direction) with completion rates. Data could therefore be considered redundant if completion rate data are reported.

Issue:

o Should multiple dropout rate data be reported for the nation in 1991 (e.g., single year dropout rates and the proportion of 15–24 year olds who are dropouts)?

4. *Dropouts Who Go On To Complete High School.* **National data** available approximately once a decade from NCES longitudinal studies or annually from Census Bureau data (Current Population Survey) combined with data on GEDs. An example of the data to be published would be the proportion of dropouts from the sophomore class of 1980 who receive a high school credential by 1986.

Strengths:

o Direct measure of objective 2;

o Some strong support for this particular indicator in public testimony.

Weaknesses:

o National data only;

o Census/GED data have never been combined in this manner. May encounter technical problems;

o NCES longitudinal studies data are infrequently collected (probably only one progress measure will be available on this, late in the decade).

B. Potential Reporting Options

1. *Report data on each of the four national level and two state level indicators as described above.* The resource group believes that all their recommended indicators constitute important information that should be presented to the nation in the 1991 report.

2. *Report overall high school completion rate data at the national level.* Under this option, data would be provided on national progress relative to the goal. The group can be defined as 19–20 year olds', 24–25 year olds', or both. State data reporting could be deferred until the creation of a national student reporting system later in the decade or until better standardization of state reporting on this topic has been achieved.

3. *Report national and state high school completion rate data.* State data on high school completion can be reported along with the national data. The state data would be estimated in the same manner previously used to produce the Secretary's Education Wall Chart.

4. *Report completion rate data (under either of options 2, or 3) plus national–level breakouts by racial/ethnic group.* The progress of racial/ethnic groups could be monitored annually. This would be directly responsive to measuring progress under objective 2.

5. *Report completion rate data (under options 2, 3 or 4) plus predictor data (e.g., poverty, limited English proficiency, student attitudes about school etc).* This would shift the focus of attention from race/ethnic background to other factors associated with completing school.

6. *Report completion rate data (under options 2, 3, 4 or 5) plus national level dropout data.* Provides a measure for objective 1.

7. *Report completion rate data plus national and state–level dropout data.*

8. *Report completion rate data (options 2, 3, 4 or 5), dropout data (options 6 or 7) plus national data on dropouts eventually completing High School.* Provides a measure for the 75% progress standard under objective 1.

STUDENT ACHIEVEMENT AND CITIZENSHIP

Goal and Objectives

GOAL 3: **By the year 2000, American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.**

Objectives:

- The academic performance of elementary and secondary students will increase significantly in every quartile, and the distribution of minority students in each level will more closely reflect the student population as a whole.
- The percentage of students who demonstrate the ability to reason, solve problems, apply knowledge, and write and communicate effectively will increase substantially.
- All students will be involved in activities that promote and demonstrate good citizenship, community service, and personal responsibility.
- The percentage of students who are competent in more than one language will substantially increase.
- All students will be knowledgeable about the diverse cultural heritage of this nation and about the world community.

1991 Options for Reporting on Student Achievement and Citizenship

A. Recommendations of Resource Group 3

The Resource Group recommends **four national and four state-level indicators** for publication in the September 1991 Progress Report:

1. *Achievement Scores From the National Assessment of Educational Progress (NAEP).* **National and more limited state data** from NCES. National data were collected most recently for grades four, eight and twelve in English (1990), mathematics (1990), science (1990), and history (1988), and in grade twelve in geography (1988). Plans are to administer assessments in these areas periodically through the decade. State data for the 1991 report would be limited to eighth grade mathematics achievement in 37 states. An example of the data to be published would be the percentage of students in 1990 scoring at an "advanced" proficiency level in mathematics.

   Strengths:
   o Highest priority of resource group 3;
   o Direct measure of the goal and the first two objectives;
   o Direct measure of student achievement in curricula areas. Taps some higher order as well as basic skills;
   o National and some state data currently available, with plans for expanded future state collections;
   o Strongly endorsed by resource group and supported by most educational constituencies in public outreach over SAT/ACT alternative;
   o Nationally representative student sample; not true of SAT/ACT;
   o Achievement proficiency standard has now been established in mathematics.

   Weaknesses:
   o State data currently limited to one subject (mathematics), at one grade level (eighth) for a subset of states (37);
   o Relatively infrequent reporting cycles in some content areas;
   o Public school data only;
   o Some experts question the validity of the recently approved NAEP proficiency standards in mathematics as a baseline for measuring progress.
   o Relatively weak measure in higher order skill areas.

   Issues:
   o In how many subjects and in how many grade areas should national data be reported for in 1991?;
   o Should NAEP data outside the 5 content areas specifically enumerated in the goals statement be reported in 1991 to the extent they are available?;

o Should the 1991 report publish racial/ethnic group breakouts?, average achievement levels by quartile?, male and female achievement?;
o Should state data for the 37 states participating in the NAEP trial state assessments in mathematics be published? If so, should the data include the percentage of students attaining different proficiency levels?

Potential alternative/additional indicators:
o SAT/ACT;

2. *Number of Advanced Placement Tests Given and Test Scores Earned.* **National and state data** available annually from The College Board. An example of the data to be published would be the percentage of 11th and 12th grade students taking Advance Placement exams in chemistry.

Strengths:
o Annual national and state measures of AP tests and scores are seen by some as a proxy measure for exposure to challenging course content;
o Strongly recommended by resource group, and frequently supported in public testimony;

Weaknesses:
o Number of tests given not a direct outcome measure;
o AP performance may be unstable over time and across states due to differences in the types of students taking the exams;
o Measures course-taking and performance of only a small percentage of the student population (less than 5 percent);

Issues:
o Should data on both the percentage of students taking these tests given and their average test scores be reported?;
o Should data on each of the five core content areas be reported?; What about other areas? (e.g., the arts, and foreign languages).
o Should data include race/ethnic, male/female or other demographics breakouts?

3. *High School Course Enrollments.* **National data** from NCES transcript studies conducted in 1982 and 1987. **State data** from a Council of Chief State School Officers study of student enrollments in science and mathematics courses in 37 states. An example of the data to be published would be the percentage of eighth grade students who enroll in algebra courses.

Strengths:
o Recognized association with student performance;
o Similar transcript studies are planned for this decade for comparison with this national baseline. Plans for a new state data collection in 1992.

Weaknesses:

o Can be seen as implicitly endorsing traditional course structures and sequencing patterns (e.g., algebra followed by geometry followed by trigonometry etc.) when these are being questioned by standard setting groups such as NCTM.
o Not a direct measure of goal;
o CCSSO data limited to 37 states for 1991 report.

4. *National Poll on Satisfaction of the Education System's Clients.* New **national** data collection. An example of the data to be published would be the percentage of parents of school-age children who are very satisfied with the quality of their children's education.

Strengths:

o Frequent explicit support in public testimony, especially among non-educators;
o Easily understandable to general citizenry.

Weaknesses:

o Short time-frame for publication by September 1991;
o Satisfaction levels may not be related to students' actual performance;
o Not a direct measure of the goal.

5. *State Progress in Systemic Education Reform.* New **state** data collection on one or more state-specific education improvement initiatives that appear to be resulting in improved achievement. An example of the data to be published would be effects of state curriculum frameworks that embody the achievement targets of Goals 3 and 4 on statewide student achievement.

Strengths:

o Can advertise and promote state progress in educational reform;

Weaknesses:

o Data will not be standard across the states;
o Difficult to accurately measure and assess the quality and nature of state reform efforts;
o Short time-frame for publication by September 1991.
o Not a direct measure of the goal.

Issue:

o Is the 1991 progress report the best place to publish data on systemic state reform? Should such data be presented in individual state progress reports?

6. *A Potential Citizenship Indicator in the 1991 Report.* Several commenters requested that one or more measures of citizenship be included in the progress report. Some of the kinds of measures recommended (e.g., the percentage of students involved in community service activities) can be reported in 1991, using data from NCES' National Education Longitudinal Survey (NELS:88).

B. Potential Reporting Options

1. *Report data on each of the four national level and four state level indicators as described above.* The resource group believes that all their recommended indicators constitute important information that should be presented to the nation in the 1991 report.

2. *Report the most recent national NAEP achievement data in the five core content areas for grades four, eight and twelve. Include state achievement data in eighth grade mathematics but not by proficiency levels.* Under this option, baseline performance levels would be established by grade and content area for the five core subjects listed under the goal. Reporting mathematics scores by proficiency levels would be delayed until the next mathematics assessment.

3. *Report the most recent national and state NAEP achievement data (in eighth grade mathematics) and include state proficiency baseline scores in mathematics.* This option is identical to option 2 except mathematics scores would be reported by the recently established proficiency levels.

4. *Report the most recent national and state NAEP achievement data (Options 2 or 3) with score breakdowns by race/ethnicity, and performance quartile as noted in objective one under this goal;*

5. *Report SAT/ACT scores in addition to NAEP achievement scores;* Unlike NAEP, SAT/ACT data are available annually at both the state and national levels. Their use has been advocated by some as a reasonable indicator of achievement for college-bound populations. Others have criticized the use of this indicator on the grounds of the limited and variable nature of the student population pool being tested and the tenuous relationship between the knowledge and skills directly measured in these examinations and the content of instructional programs.

6. *Report NAEP and/or SAT/ACT plus one or more indicators of high school curricula (e.g., AP test-taking, high school course enrollments or both).* Either or these can serve as an indirect indicator of student exposure to challenging courses. AP data are available by state but have comparability and equity shortcomings (it costs $65.00 to take the exams). NCES' transcript studies provide good national data but no state data, and are infrequently undertaken. The Council of Chief State School Officers' recent report on science and mathematics enrollments in high school will not have data for every state in 1991 and is not directly comparable to the national transcript study data.

7. *Report any of options 2 through 6 plus data from a national poll on client educational system satisfaction and/or the effectiveness of state reforms.*

SCIENCE AND MATHEMATICS

Goal and Objectives

GOAL 4: **By the year 2000, U.S. students will be first in the world in science and mathematics achievement.**

Objectives:

- Math and science education will be strengthened throughout the system, especially in the early grades.
- The number of teachers with a substantive background in mathematics and science will increase by 50 percent.
- The number of U.S. undergraduate and graduate students, especially women and minorities, who complete degrees in mathematics, science, and engineering will increase significantly.

1991 Options for Reporting on Science and Mathematics Achievement

A. Recommendations of Resource Group 4

The Goal 4 Resource Group recommends publication of **five national indicators and four state level** indicators in the September 1991 Progress Report.

1. *International Science and Mathematics Achievement Comparisons*. **National data** available from the (1982 and 1986) International Assessment of Educational Achievement and/or the (1988) International Assessment of Educational Progress. Future studies from both assessments are planned for later in the decade. An example of the data to be published would be the ranking of U.S. students on these examinations compared with those of other nations. There are two separate sources of international achievement data, IEA and IAEP. IEA has 23 countries for baseline comparison with the U.S., but the data are from the early and middle 1980s and future data will not be available until 1995. Baseline IAEP data are more recent (1988) but are for only the U.S. and four other nations. IAEP however will have data from 20 nations available in 1992.

   Strengths:
   o Highest resource group priority (the IEA data) after the reporting of NAEP scores in science and mathematics;
   o Direct measure of the goal;
   o Future assessments planned in the decade (1992, 1994, 1998);
   o Can report on all students and subsets of students (e.g., the top 5 percent of each nation's students);
   o U.S. rankings on these studies are already well known to the public.

   Weaknesses:
   o No comparative data on postsecondary educational achievement in science and mathematics;

   Issues:
   o Should the 1991 report publish baseline IEA data, IAEP data or both? (The resource group considers IEA to be the higher priority indicator).
   o Should the 1991 report contain data in addition to mean scores and rankings in 1991 (such as the average scores of top mathematics and science performers in different nations)?
   o Should the 1991 report contain data on the percentage of youth attending school in the different nations, along with the achievement scores and rankings?

2. *Achievement Scores From the National Assessment of Educational Progress (NAEP).* See discussion under goal 3.

3. *Instructional Practices and Math/science Teacher Characteristics.* **National and state data** available from NCES through NAEP (1990 science and mathematics assessments), and the Schools and Staffing Survey (1988). An example of data to be published would be the percentage of high school mathematics teachers in 1988 who majored in mathematics or possessed advanced mathematics degrees.

   Strengths:
   o Instructional practices and substantive backgrounds of math/science teachers are strongly associated with student performance;
   o Specifically endorsed by some members of the education community in public testimony.
   o National and some state data currently available;
   o Measure of teacher background in mathematics and science directly applicable to objective two (50 percent increase in teachers with substantive backgrounds in mathematics and science).
   o Data on instructional practices responsive to objective 1 (strengthening mathematics and science education, especially in the early grades);
   o Future data collections already planned to track changes through the decade.

   Weaknesses:
   o Not a direct measure of the goal;
   o Citizens may not readily understand the linkage between instructional practices and student achievement;
   o No consensus in the research community regarding which specific available measures are most strongly associated with student achievement gains. Makes indicator selection difficult;

   Issues:
   o Should data on instructional practices, mathematics/science teacher background or both be published in the 1991 report?

4. *Student/Teacher Attitudes and Beliefs About Science and Mathematics.* **National data** available from NCES (NAEP attitude questionnaires, and NELS: 88) and NSF survey of science and mathematics education (1986); **State data** from NCES (the 1990 trial mathematics assessment in 37 states). An example of the data to be published would be the percentage of students who believe mathematics or science achievement is determined more by natural ability than hard work.

Strengths:
o Seen by most educators as associated with student performance;
o National and some state data currently available (in addition to international comparative data on student attitudes from the IEA studies);
o Future data collections already planned by NCES (NAEP and NELS) and NSF. These can be used to track changes in attitudes and beliefs through the decade.

Weaknesses:
o Not a direct measure of the goal;
o Relationship to student achievement may not be readily apparent to some citizens.

Issue:
o Should the 1991 report contain data on student attitudes about science and mathematics, along with achievement scores and rankings?

5. *Higher Education Enrollments and Graduates in Science and Mathematics.* **National and state data** available annually from NCES survey of postsecondary institutions (IPEDS collection) and NSF survey of graduate students. An example of the data to be published would be the number and percentage of students receiving baccalaureate degrees in 1990 who majored in Physics.

Strengths:
o Direct measure of objective 3;
o Annual data available at both the national and state levels;

Weaknesses:
o Not a direct measure of the goal;
o No international data or program quality measures currently available.

B. Potential Reporting Options

1. *Report data on each of the five national level and four state level indicators as described above.* The resource group believes that all their recommended indicators constitute important information that should be presented to the nation in the 1991 report.

2. *Report average achievement scores and rankings on recent international achievement tests (IAEP, IEA or both).* This would be directly responsive to the goal statement. Under this option the report would provide no other international comparative information or data about mathematics and science education in the nation or individual states.

3. *Report international achievement scores and rankings plus additional international comparative information.* Additional information could include scores of top achievers, percentage of youth attending school and attitudes about mathematics and science education.

4. *Report international achievement data (options 2 or 3) plus national and state data on teachers with a substantive background in mathematics and science.* The background data would be directly responsive to measuring objective two.

5. *Report international achievement data (options 2 or 3) plus data on instructional conditions and practices.* The instructional conditions and practices data would be directly responsive to measuring objective 1.

6. *Report international achievement data (options 2 or 3), data on teachers' mathematics/science backgrounds and data on instructional conditions and practices.*

7. *Report any of options 2 through 6 plus data on higher education enrollments and graduates in mathematics and science.* The higher education data would be directly responsive to measuring objective 3.

ADULT LITERACY AND LIFELONG LEARNING

Goal and Objectives

GOAL 5: **By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.**

Objectives:

- Every major American business will be involved in strengthening the connection between education and work.
- All workers will have the opportunity to acquire the knowledge and skills, from basic to highly technical, needed to adapt to emerging new technologies, work methods, and markets through public and private educational, vocational, technical, workplace, or other programs.
- The number of high-quality programs, including those at libraries, that are designed to serve more effectively the needs of the growing number of part-time and mid-career students will increase substantially.
- The proportion of those qualified students (especially minorities) who enter college, who complete at least two years, and who complete their degree programs will increase substantially.
- The proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively, and solve problems will increase substantially.

1991 Options for Reporting on Adult Literacy and Lifelong Learning

A. Recommendations of Resource Group 5

The Goal 5 Resource group recommends publication of **three national and state-level indicators** in the 1991 progress report:

1. *Measures of Literacy.* **National data** available from NCES (1985 Young Adult Literacy Survey), the Department of Labor (1990 Assessment of Special Populations Literacy Skills), and annually from the Department of Defense (Armed Forces Qualification Test). **State data** (1990) from Mississippi and Oregon (using the DOL literacy assessment instrument). An example of the data to be published would be the percent of adults scoring below an established basic literacy standard on any or all of these examinations.

   Strengths:
   o Provides direct measures of the literacy goal;
   o NCES data can provide partial baseline with planned future literacy assessments beginning in 1992;
   o DOL data addresses literacy skills of special populations;
   o NCES and DOL data employ same literacy skill categories.

   Weaknesses:
   o None of the current national data provide a comprehensive national picture of adult literacy. Data limited by age (NCES survey limited to 21–25 year olds'), special population status (the DOL survey), or desire to enter the military (DOD's Armed Forces Qualification Test);
   o The Armed Forces Qualification Test (AFQT) employs a different literacy standard then the other two assessments.
   o The AFQT will be taken by varied populations over time, making its use as a baseline literacy indicator problematic.
   o None of the currently available national literacy measures assess the literacy levels of limited English proficient populations.

   Issues:
   o Should the Panel publish data from one or more of these measures in the 1991 report or wait until 1992, when data from the more comprehensive National Adult Literacy Survey will be available for the nation and some states? (The resource group would recommend publication in 1991 of all three measures. If forced to choose they would select the Young adult literacy survey)
   o If data are published in 1991, should it include breakdowns by race/ethnic group and level of educational attainment?

Potential alternative/additional indicators:
o Comprehensive Adult Student Assessment System;
o Armed Forces Qualification Test Scores by State;
o The percentage of adults with limited English proficiency.

2. *Workforce Participation in Adult Training Programs.* **National data** from a new National Center for Education Statistics survey of households with comparable data anticipated twice more during this decade. **National and limited state data** from a new Department of Labor survey supplement to the Census Bureau's Current Population Survey. An example of the data to be published would be the percentage of adults enrolled in programs for literacy, management or specific job skills.

Strengths:
o Responsive to the overall goal (lifelong learning) and to objective 2;
o NCES data collection on adult participation in lifelong learning activities will be replicated twice more during the decade;
o DOL data on how workers receive their skills preparation may be compared with 1983 data on worker training.
o Recent data collections (1990)

Weaknesses:
o Data show participation in education and training programs but not their availability;
o NCES data is considered to be a "field test" by OMB, and may not be available for 1991. DOL data availability may also be problematic due to the recency of the collection.
o Limited state data. No agency plans for future state level data collection.

3. *Higher Education Enrollment and Completion.* **National data** available annually from NCES cross-sectional studies of postsecondary institutions (IPEDS) and approximately once a decade from longitudinal studies of students. **State data** available annually from NCES and from individual states with existing student record systems in higher education. An example of the data to be published would be the estimated percentage of 1984 college freshman in four-year institutions receiving baccalaureate degrees by 1990.

Strengths:
o Direct measure of objective 4;
o Higher education enrollment data available annually for the nation and every state;
o Data from prior longitudinal studies data can provide baseline for tracking comparisons of student enrollment and completion rates in the 1990s, including those for minority students.

o Proxy enrollment and graduation data by race and ethnic group can be produced annually at both the national and state levels;

Weaknesses:
o Not a direct measure of the goal;
o Longitudinal data on enrollment and completion will likely be available only once in the late 1990s and will contain only limited state data;
o The quality of proxy measures of higher education enrollment and graduation have been seriously questioned by some technical experts;

Issues:
o Should proxy measures be used to estimate higher education completion rates in the states?
o Should different data sources be used for information about enrollment and graduation rates in states with and without student record systems?

4. *New State Surveys.* New state data collections from existing state sources to supplement national level information on literacy, lifelong learning and higher education enrollment and completion.

Strengths:
o Will provide baseline 1991 information to measure state progress on in the areas of literacy, lifelong learning and higher education enrollment and completion.

Weaknesses:
o Will be difficult to gather and analyze data in time for the September 1991 report;
o Data will not be comparable across states. Quality of some state data may be problematic.

Issue:
o To what extent should the 1991 progress report rely on state-specific surveys and assessments as baseline measures?

B. Potential Reporting Options

1. *Report data on each of the three national and state level indicators as described above.* The resource group believes that all their recommended indicators constitute important information that should be presented to the nation in the 1991 report.

2. *Report national level data on workforce participation in adult education and training programs in the September 1991 report.* Because no comprehensive literacy measure is currently available, but one will be available next year, the Panel could decide to delay reporting directly on adult literacy until the 1992 report.

3. *Report national level data on literacy in the September 1991 report.* Data could come from the 1985 NALS, the DOL literacy survey of special populations and/or the Armed Forced Qualification Test. Such data can be reported as either baseline measures for future monitoring or as background information.

4. *Report national level data on participation in adult education and training and one or more national measures of literacy such as the 1985 NALS, DOL assessment of special population literacy or the Armed Forces Qualifying Test Scores.*

5. *Report on literacy, adult education and training or both plus provide baseline data, on higher education enrollment and completion.* This would assumedly include national and state higher education enrollment information. It might also include baseline national longitudinal data on higher education graduation rates in the 1970s and 1980s, and/or a baseline proxy graduation rate for 1991 for the nation and each state.

5. *Supplement the national data on adult education and training, literacy or higher education enrollment and completion with baseline data collected directly from the states.* Under this option more state data could be reported in 1991, but the data would necessarily be non-comparable across states. Even comparative tracking of progress over time would be problematic for states using different data systems for tracking their progress.

SAFE, DISCIPLINED, AND DRUG-FREE SCHOOLS

Goal and Objectives

GOAL 6: **By the year 2000, every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning.**

Objectives:

- Every school will implement a firm and fair policy on use, possession, and distribution of drugs and alcohol.
- Parents, businesses, and community organizations will work together to ensure that schools are a safe haven for all children.
- Every school district will develop a comprehensive K-12 drug and alcohol prevention education program. Drug and alcohol curriculum should be taught as an integral part of health education. In addition, community-based teams should be organized to provide students and teachers with needed support.

1991 Options for Reporting on Safe, Disciplined and Drug-Free Schools

A. Recommendations of Resource Group 6

The Resource Group recommends publication of **four national indicators and one state level indicator** in the 1991 Progress Report:

1. *Student Use of Drugs.* **National data** available annually from a National Institute on Drug Abuse (NIDA) student survey. **State data** (21 states) available from a biennial Centers for Disease Control student survey. An example of the data to be published would be the percentage of 12th grade students in 1990 who report using various illegal drugs within the previous year.

   Strengths:
   - o Highest priority indicator of resource group 6;
   - o Strong support in some public testimony for student rather than school focus;
   - o Available annually at the national level;
   - o Data from more states should become available in future years;
   - o Of compelling interest to the public.

   Weaknesses:
   - o Not a direct measure of the goal;
   - o State data limited to 21 states in 1991.

   Issues:
   - o Should data on student use of steroids, alcohol and tobacco be published?
   - o Should data on peer norms regarding the acceptability of drug use be published as well as direct data on actual drug use?

2. *Student Drug Use in School.* **National data** available from an annual NIDA student survey. An example of the data to be published would be the percentage of 12th grade students in 1990 who report using various illegal drugs in or around school within the previous year.

   Strengths:
   - o A more direct measures of the goal (drug-free schools), than student use of drugs;
   - o Data from states could be easily collected available in future years (through the CDC).

   Weaknesses:
   - o Not strongly recommended by the resource group. They prefer a measure (currently unavailable) on being under the influence of drugs while at school.
   - o Incidence of actual drug use in school is relatively low.

Potential alternative/additional indicators:
o Existence of school policies on use, possession and distribution of drugs and alcohol (objective 1);
o Parent/community involvement in alcohol, tobacco and drug prevention programs (objective 2);
o School district drug and alcohol prevention programs (objective 3);

3. *Victimization in School.* **National data** from an annual NIDA student survey (student victimization) a 1991 NCES teacher survey (teacher victimization and perceptions of school safety) and a 1989 Department of Justice student survey (student perceptions of school safety and weapons in school). An example of data to be published would be the percentage of teachers in 1991 reporting physical assaults in or around school during the previous year.

Strengths:
o Directly measures the goal (schools free of violence);
o Substantial baseline national data currently available, with plans for future collections on these measures through the decade;
o Teacher as well as student data available;

Weaknesses:
o No state data currently available;

Issues:
o Should the Panel publish national data on incidence of violence and crime in school, perceptions about their safety or both?

o Should national data on teacher victimization and/or feelings of safety be reported in addition to data about students?

o Should national data on weapons in school be published?

4. *Disciplined School Environments Conducive to Learning.* **National data** available annually from NIDA survey of 12th grade students and from a 1991 NCES teacher survey (FRSS). An example of data to be published would be the extent to which teachers in 1991 believe that student disruption interferes with their teaching.

Strengths:
o Directly responsive to the goal;
o Plans in place for replicating relevant survey items through the decade.

Weaknesses:

o No direct measures of the frequency of student misconduct currently available;
o No recent measures of school discipline policies available;
o Resource group questions the reliability of current questions on student and teacher perceptions of school misconduct as baseline measures;

Potential alternative/additional indicators:

o School attendance rates;
o Incidence of class-cutting.

C. Potential Reporting Options

1. *Report on each of the four national level and one state level indicators as described above.* The resource group believes that all their recommended indicators constitute important information that should be presented to the nation in the 1991 report.

2. *Report only on school drug use and victimization in the 1991 report.* The focus of measurement would be restricted to the school under this option, hence no data would be provided on student drug use. When information on students attending school under the influence of drugs, it can be published. Given the current limitations in the availability and quality of data on school learning environments and discipline, the Panel could choose not to collect data in this area until better information becomes available.

3. *Report on school and student drug use and victimization in the 1991 report.*

4. *Options 2 or 3 plus data on disciplined environments conducive to learning.* The data could either be presented as a baseline or as background information.

NATIONAL EDUCATION GOALS PANEL

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